

Form PTO-1449 (Modified)

U. S. Department of Commerce
Patent and Trademark OfficeAtty. Docket No
27866/37993Serial No
10/034,015

INFORMATION DISCLOSURE STATEMENT

(Use several sheets if necessary)

Applicant
Kate LoughneyFiling Date
12-20-01Group
1652

U.S. PATENT DOCUMENTS

*Examiner Initials		Document Number	Issue Date	Name	Class	Subclass	Filing Date If Appropriate
RH	A1	5,389,527	2-14-95	Beavo et al.	435	69.1	
RH	A2	5,922,595	7-13-99	Fisher et al.	435	320.1	

FOREIGN PATENT DOCUMENTS

*Examiner Initials		Document Number	Publication Date	Country	Class	Subclass	Translation	
							Yes	No
RH	B1	WO 91/09955	07-11-91	PCT	—	—		
	B2	WO 92/20808	11-26-92	PCT	—	—		
	B3	WO 94/12650	06-09-94	PCT	—	—		
RH	B4	WO 97/09433	03-13-97	PCT	—	—		
RH	B5	0 044 527 A1	7-15-81	EPO	—	—		

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)

RH	C1	Anderson, "Human gene therapy," <i>Nature</i> , supplement to vol. 392, no. 6679, p. 25 (1998)
RH	C2	Ausebel, et al., "Screening of Recombinant DNA Libraries," <i>Current Protocols in Molecular Biology</i> , John Wiley & Sons, pp. 6.0.3-6.4.10 (1994)

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PA	C3	Avramopoulos, et al., "Linkage mapping of the cystathionine β -synthase (CBS) gene on human chromosome 21 using a DNA polymorphism in the 3' untranslated region," <i>Hum. Genet.</i> 90 :566-568 (1993)
	C4	Beavo, "Cyclic Nucleotide Phosphodiesterases: Functional Implications of Multiple Isoforms," <i>Physiol. Rev.</i> 75 :725-748 (1995)
	C5	Bolger, et al., "A Family of Human Phosphodiesterases Homologous to the <i>dunce</i> Learning and Memory Gene Product of <i>Drosophila melanogaster</i> Are Potential Targets for Antidepressant Drugs," <i>Mol. Cell. Biol.</i> 13 :6558-6571 (1993)
	C6	Bolger, et al., "Characterization of five different proteins produced by alternatively spliced mRNAs from the human cAMP-specific phosphodiesterase PD34D gene," <i>Biochem. J.</i> 328 :539-548 (1997)
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	C9	Bramlage, et al., "Designing ribozymes for the inhibition of gene expression," <i>Trends in Biotech</i> 16 :434-438 (1998)
	C10	Cane, et al., "Harnessing the Biosynthetic Code: Combinations, Permutations, and Mutations," <i>Science</i> 282 :63-68 (1998)
	C11	Capecchi, "Altering the Genome by Homologous Recombination," <i>Science</i> 244 :1288-1292 (1989)
	C12	Charbonneau, et al., "Identification of a conserved domain among cyclic nucleotide phosphodiesterases from diverse species," <i>Proc. Natl. Acad. Sci. (USA)</i> 83 :9308-9312 (1986)
BK	C13	Collins, et al., "The Human β -Subunit of Rod Photoreceptor cGMP Phosphodiesterase: Complete Retinal cDNA Sequence and Evidence for Expression in Brain," <i>Genomics</i> 13 :698-704 (1992)

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RV	C14	Coste, et al., "Characterization of a Novel Potent and Specific Inhibitor of Type V Phosphodiesterase," <i>Biochem. Pharmacol.</i> 50 :1577-1585 (1995)
	C15	Delabar, et al., "Molecular Mapping of Twenty-Four Features of Down Syndrome on Chromosome 21," <i>Eur. J. Hum. Genet.</i> 1 :114-124 (1993)
	C16	Francis, et al., "Zinc Interactions and Conserved Motifs of the cGMP-binding cGMP-specific Phosphodiesterase Suggest That It is a Zinc Hydrolase*," <i>J. Biol. Chem.</i> 269 :22477-22480 (1994)
	C17	Friedmann, "Progress Toward Human Gene Therapy," <i>Science</i> 244 :1275-1281 (1989)
	C18	Gibson, et al., "Ribozymes: Their Functions and Strategies for Their Use," <i>Mol. Biotech.</i> 7 :125-137 (1997)
	C19	Harbinson, et al., "The effect of a novel orally active selective PDE4 isoenzyme inhibitor (CDP840) on allergen-induced responses in asthmatic subjects," <i>Eur. Respir. J.</i> 10 :1008-1014 (1997)
	C20	Harlow, et al., "Monoclonal Antibodies," <i>Antibodies: A Laboratory Manual</i> , Cold Spring Harbor Laboratory; Cold Spring Harbor, NY Chapter 6 (1988)
	C21	Harlow, et al., "Fusion by Stirring (50% PEG)*," <i>Antibodies, a Laboratory Manual</i> , Cold Spring Harbor Laboratory, p. 211 (1988)
	C22	Houston, et al., "The chemical-biological interface: developments in automated and miniaturised screening technology," <i>Curr. Opin. Biotechnol.</i> 8 :734-740 (1997)
	C23	Jayawickreme, et al., "Gene expression systems in the development of high-throughput screens," <i>Curr. Opin. Biotechnol.</i> 8 :629-634 (1997)
	C24	Korenberg, et al., "Down syndrome phenotypes: The consequences of chromosomal imbalance," <i>Proc. Natl. Acad. Sci. (USA)</i> 91 :4997-5001 (1994)
RV	C25	Lavrovsky, et al., "Therapeutic Potential and Mechanism of Action of Oligonucleotides and Ribozymes," <i>Biochem. Mol. Med.</i> 62 :11-22 (1997)

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PK	C26	Lehninger, "The Amino Acid Building Blocks of Proteins," <u>Biochemistry</u> , Second Edition; Worth Publishers, Inc. NY-NY pp. 71-77 (1975)
	C27	Loughney et al., "Isolation and Characterization of cDNAs Corresponding to Two Human Calcium, Calmodulin-regulated, 3',5'-Cyclic Nucleotide Phosphodiesterases*," <u>J. Biol. Chem.</u> 271:796-806 (1996)
	C28	Loughney, et al., "Identification and Quantification of PDE Isoenzymes and Subtypes by Molecular Biological Methods," <u>Phosphodiesterase Inhibitors</u> , Academic Press: New York, New York pp. 1-19 (1996)
	C29	Manganiello, et al., "Cyclic GMP-Inhibited Cyclic Nucleotide Phosphodiesterases," <u>Isoenzymes of Cyclic Nucleotide Phosphodiesterases</u> , John Wiley and Sons, Ltd., pp. 87-116 (1990)
	C30	Manganiello, et al., "Perspectives in Biochemistry and Biophysics Isoenzyme Families," <u>Arch. Biochem. Acta</u> 322:1-13 (1995)
	C31	Meacci, et al., "Molecular cloning and expression of human myocardial cGMP-inhibited cAMP phosphodiesterase," <u>Proc. Natl. Acad. Sci. (USA)</u> 89:3721-3725 (1992)
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	C33	Miki, et al., "Characterization of the cDNA and Gene Encoding Human PDE3B, the cGIP1 Isoform of the Human Cyclic GMP-Inhibited Cyclic Nucleotide Phosphodiesterase Family," <u>Genomics</u> 36:476-485 (1996)
	C34	Miller, "Human gene therapy comes of age," <u>Nature</u> 357:455-460 (1992)
PK	C35	Munke, et al., "The Gene for Cystathionine β -Synthase (CBS) Maps to the Subtelomeric Region on Human Chromosome 21q and to Proximal Mouse Chromosome 17," <u>Hum. Genet.</u> 42:550-559 (1988)

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RV	C36	Myers, "Will combinational chemistry deliver real medicines?" <i>Curr. Opin. Biotechnol.</i> 8:701-707 (1997)
	C37	Pittler, et al., "Molecular Characterization of Human and Bovine Rod Photoreceptor cGMP Phosphodiesterase α -Subunit and Chromosomal Localization of the Human Gene," <i>Genomics</i> 6:272-283 (1990)
	C38	Piriev, et al., "Gene Structure and Amino Acid Sequence of the Human Cone Photoreceptor cGMP-Phosphodiesterase α' Subunit (PDEA2) and Its Chromosomal Localization to 10q24," <i>Genomics</i> 28:429-435 (1995)
	C39	Podzuweit, et al., "Isozyme Selective Inhibition of cGMP-Stimulated Cyclic Nucleotide Phosphodiesterases by Erythro-9-(2-Hydroxy-3-Nonyl) Adenine," <i>Cell. Signaling</i> 7:733-738 (1995)
	C40	Price, et al., "Expression of Heterologous Proteins in <i>Saccharomyces cerevisiae</i> Using the <i>ADH2</i> Promoter," <i>Meth. Enzymol.</i> 185:308-315 (1990)
	C41	Rosman, et al., "Isolation and characterization of human cDNAs encoding a cGMP-stimulated 3',5'-cyclic nucleotide phosphodiesterase ¹ ," <i>Gene</i> 191:89-95 (1997)
	C42	Sambrook, et al., "Hybridization of Radiolabeled Probes to Immobilized Nucleic Acids," <i>Molecular Cloning: A Laboratory Manual</i> , Cold Spring Harbor Laboratory Press: Cold Spring Harbor, New York (1989), pp. 9.47-9.51
	C43	Schudt, et al., "Analysis of PDE4 Isoenzyme Profiles in Cells and Tissues by Pharmacological Methods," <i>Phosphodiesterase Inhibitors</i> , Academic Press: New York, New York pp. 21-40 (1996)
	C44	Sertie, et al., "A gene which causes severe ocular alterations and occipital encephalocele (Knobloch syndrome) is mapped to 21q22.3," <i>Hum. Mol. Genet.</i> 5:843-847 (1996)
RV	C45	Verma, "Treatment of disease by introducing healthy genes into the body is becoming feasible. But the therapy will not reach its full potential until the genes can be coaxed to work throughout life," <i>Scientific American</i> 68-84 (1990)

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RV	C46	Vallada, et al., "Linkage studies in bipolar affective disorder with markers on chromosome 21," <i>J. Affect. Disord.</i> 41 :217-221 (1996)
	C47	Veske, et al., "Autosomal recessive non-syndromic deafness locus (DFNB8) maps on chromosome 21q22 in a large consanguineous kindred from Pakistan," <i>Hum. Mol. Genet.</i> 5 :165-168 (1996)
	C48	Yu, et al., "Identification and Characterisation of a Human Calmodulin-Stimulated Phosphodiesterase PDE1B1," <i>Cell Signaling</i> 9 :519-529 (1997)
	C49	Fisher, et al., "Isolation and Characterization of PDE9A, a Novel Human cGMP-specific Phosphodiesterase*," <i>Journal of Biological Chemistry</i> 273 :15559-15564 (1998)
	C50	Mukai, et al., "Separation and characterization of a novel isoenzyme of cyclic nucleotide phosphodiesterase from rat cerebrum," <i>Br. J. Pharmacol.</i> 111 :389-390 (1994)
RV	C51	Soderling, et al., "Identification and Characterization of a Novel Family of Cyclin Nucleotide Phosphodiesterases*," <i>Journal of Biological Chemistry</i> 273 :15553-15558 (1998)

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INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In compliance with 37 C.F.R. §1.97 and the continuing duty of disclosure under 37 C.F.R. §1.56, the attached PTO-1449 is hereby submitted by Applicants for consideration in connection with the above-identified patent application. With the exception of references A1 and A2 (Beavo et al and Fisher et al) which were cited by the Examiner in the parent application, copies of the cited documents have been previously filed and may be found in related applications United States Serial No.: 09/256,000, now U.S. Patent No. 6,350,603. This Information Disclosure Statement is not intended to be an admission that other relevant art does not exist, or that any of the information disclosed herein constitutes prior art under 35 U.S.C. §102 or §103.

This statement and PTO-1449 form are submitted after receipt of a first Office Action in the above-identified patent application. Accordingly, the Applicants

file herewith a check in the amount of \$180.00. The Commissioner is hereby
authorized to charge any fees which may be required to Deposit Account No.
13-2855. A duplicate of this paper is enclosed.

Respectfully submitted,

MARSHALL, GERSTEIN & BORUN LLP

By



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September 22, 2003